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The Chemical Age

A Weekly Journal Devoted to Industrial and Engineering Chemistry

VOL. XLVI. No. 1195. SATURDAY, MAY 23, 1942. 6D. PER COPY: POST FREE 8D.

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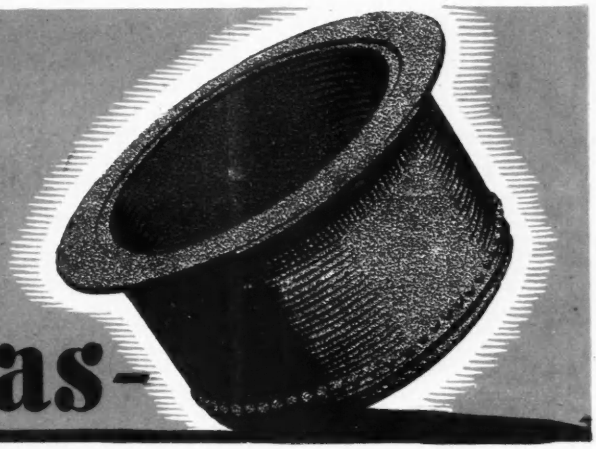

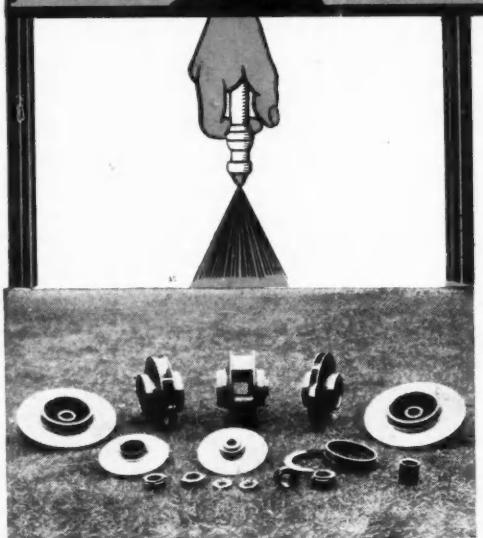

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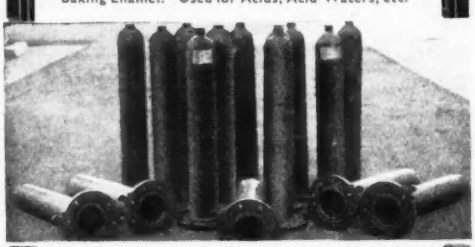

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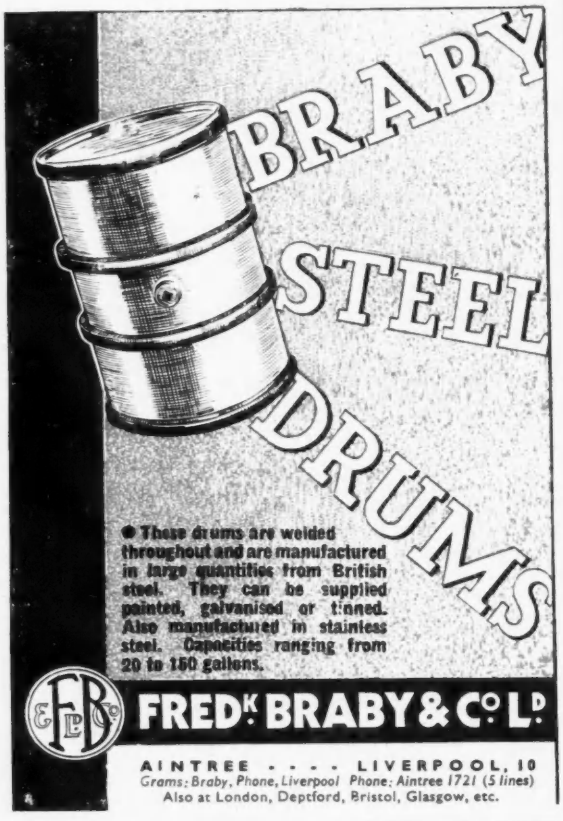

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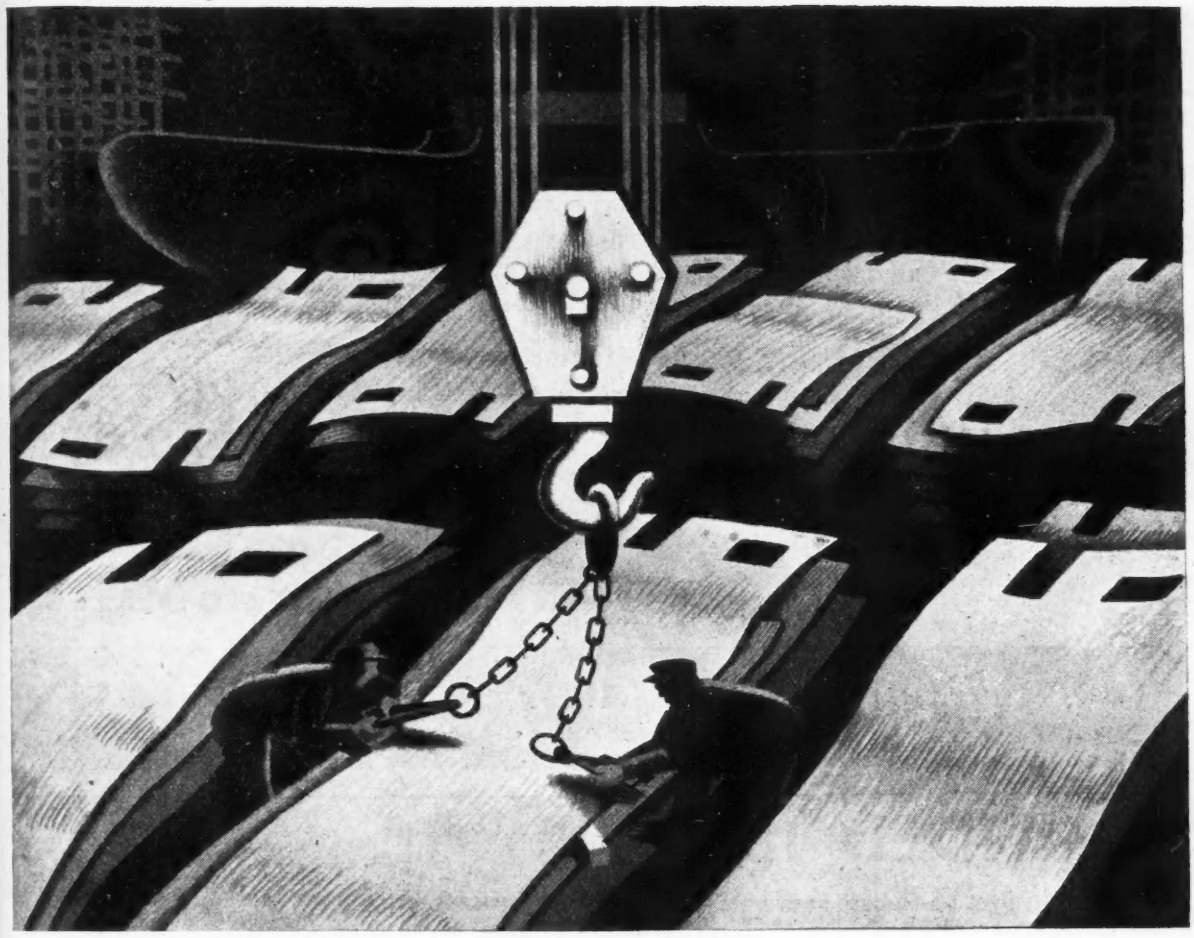

COLD STEEL

STEEL. The skeleton which supports the structure of modern civilization: the material without which modern war could not be fought. The metal in the production of which Great Britain was the pioneer and is still pre-eminent—witness the world-wide fame of the name Sheffield, and such modern British triumphs as the development of manganese and stainless steels. This pre-eminence is in large part owed to the work of the British chemist, for steel more than any other metal is the result of close liaison between the foundry and the laboratory. Its manufacture is a matter as precise as the dispensing of a medicine prescription. It is the chemist who evolves the formula, analyses the product during the making and tests the finished article. No more than a dozen years ago British research perfected a method of improving the quality of steel by purifying pig-iron. Alike for needle and anchor, for the myriad uses of the parent metal and its countless family of alloys, steel is compounded by the chemist. Nor is the chemistry of iron and steel limited to the metal itself, but extends to its by-products and to the by-products of these by-products. In a sense the output of the blast-furnace is pig-iron. By virtue of the chemist the blast-furnace also yields fertilizers, cement, valuable oils and tar: and from tar, eventually organic chemicals, including dyes and medicinal products. It is the chemist's privilege not only to ensure that British steel shall continue to lead the world, but to ensure that the transmutation of the raw material shall at every stage render its full quota for the common good.

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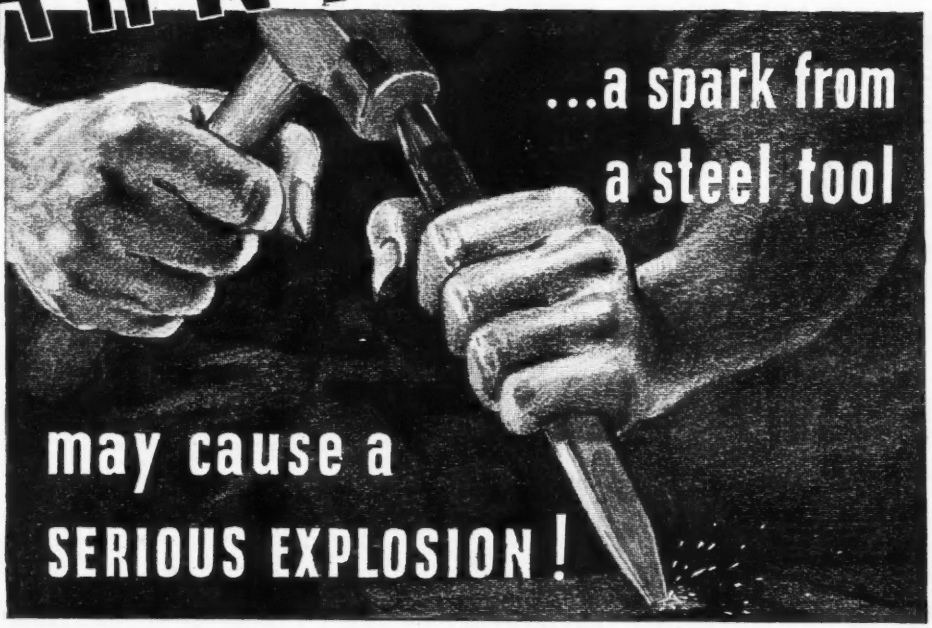

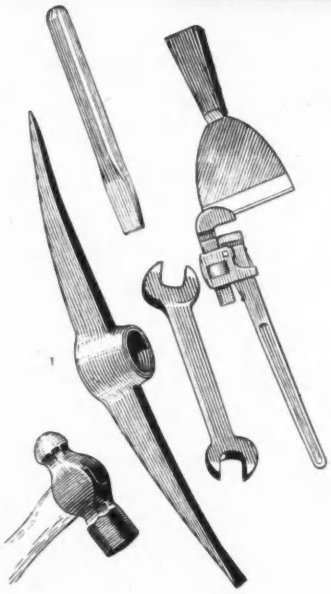

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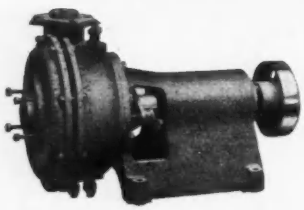

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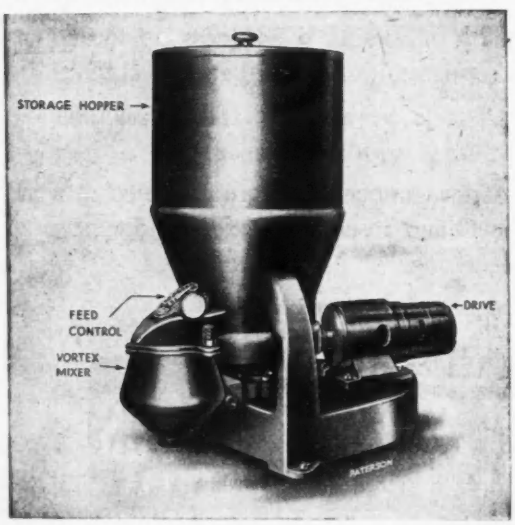

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The Scientist's Obligations

AT certain periods during their history the universities of all lands have no doubt well deserved the outside world's suspicion that they were inclined to adopt an attitude of aloofness, and even disdain, towards the ordinary problems of everyday life. Admittedly the scholar's life can be that of a recluse; he can bury himself in ancient tomes and forget, in the study of long-dead languages and past history, the noise of contemporary life. But it is to be noted that many of the best university scholars were far from being recluses; from Erasmus downwards they have been willing, as they were able, to play an active part in the life of the community. The foundation of the Royal Society may be cited as the classic occasion on which scientific scholars expressed their determination to extend the usefulness of their discoveries and observations.

It is quite obvious, at all events, that the university of to-day must keep in touch with the world outside, Most universities are now, whether they like it or not, in receipt of subventions from the State, and of donations from industrialists; and in return for these, results are expected. Not that the universities are unwilling to produce the required results; they would strive and are striving to perform the most useful functions open to them, if for no other reason than *noblesse oblige*. It is worth while considering for a moment, however, exactly what results the universities are required to produce, especially in times like these, when old institutions and preconceived ideas are in the crucible.

As often, a slightly unfamiliar perspective can often help us to see a well-known object in a truer and more vivid light; and consideration of the question in hand is aided by certain observations we have seen in the war issue of *The Nassau Sovereign*, which is the undergraduate organ of Princeton University. Like most of the older Universities of the United States, Princeton was quite distinctly a religious foundation; anyone who cares to consult the early history of the "Log College" and the Protestant pastors who established it will be left in no doubt as to that. It is not surprising, therefore, that the alumni of Princeton regard their university as a school of duty and that reference is made to the "steadying touch" which all have felt who have studied there.

Perhaps we in this country are less actively conscious of the traditions of our institutions than the Americans are; nevertheless a worthy son of any of the British universities, whether of ancient or modern foundation, is deeply, if only subconsciously, affected by the tradition of service with which these institutions are imbued. The point is well put by the writer from Princeton when he compares the unschooled man with the man who has had the advantage of a university training. "Unschooled men," he says, "have only their habits to remind them of the past, only their desires and their instinctive judgments to guide them into the future." The college, on the other hand, serves as an "organ of recollection" to its pupils; it reminds them that they are an integral part of a living organism, and enables them to distinguish between the ephemeral and the permanent.

The special application of this doctrine to scientific education will bear examination. While we would be the last to accuse research workers in general of unawareness of the traditions of their science or of the institutions in which and for which they are working, we have noted a tendency to keep research in compartments, as it were, with the inevitable result that duplication of effort occurs. Any student of chemical history can think of many occasions on which the same discovery was made independently by two researchers in different places; a famous example outside chemistry is the simultaneous discovery of the planet Neptune by Adams and Leverrier. If this doubled research work is to be avoided, scientific workers must pool their knowledge and avoid the jealous retention of "secrets." Public opinion will award credit where credit is due.

In the chemical world lately there has been a tendency, if nothing more, to cite the "interests of chemistry" (whatever that may mean) as the main objective of each individual chemist. The duty of the chemist to the community has had to take a back seat. This tendency is totally opposed to the university tradition and we were glad to see that it was vigorously attacked only the other day by Mr. William C. Peck, the chairman of the London Section of the British Association of Chemists. Responsibility towards the community on the part of the chemist as a man of science was the text of his discourse; indeed he went so far as to say that chemists to-day must realise this responsibility if they are to keep their independence; and few will gainsay him. Mr. Peck's speech is simply one more link in the chain of evidence that a spirit of service is at work, counteracting the tendency towards professional "selfishness" that we have spoken of. Last autumn the British Association enunciated a Charter of Scientific Principles in an international conference at which the chairman stressed the importance of using scientific discovery to implement human needs and aspirations—in fact, to raise the general standard of living.

Service, in fact, should be the tradition of science as much as it is the tradition of the universities. Chemists, as men of science, have a duty to the state, and it is truly in the "interests of chemistry" to ensure that all chemists are educated with this end in mind.

On Other Pages

Notes and Comments	266
Chemical Engineering Group	260
Association of Scientific Workers ...	260
Treatment of Injured Workers ...	260
Zein in Clay Coatings	261
Soft Solder	261
A Chemist's Bookshelf	262
The Mellon Institute	263
Organic Chemistry Lectures	263
Personal Notes	264
New Control Orders	264
British Chemical Prices	264
I.C.I. Annual Report for 1941 ...	265
General News from Week to Week ...	266
Forthcoming Events	266
Commercial Intelligence	267
Company News	267
Stocks and Shares	267

NOTES AND COMMENTS

International Scientific Language

IT is fashionable to ascribe the decline of Latin, as the universal language of Science, to the necessity for imparting the discoveries of scientists to a public unlettered in the classical languages. It is far more likely that the growing spirit of nationalism which has been evident in the last 150 years or so was the real cause. Be that as it may, the state of affairs now is that for international scientific intercourse a knowledge of English, German, or French is essential, apart altogether from the native idiom of lands where none of the above three languages happens to be spoken. There appears to be no doubt, however, that first-class scientific works written in one of the three standard languages ought, in addition, to be translated into the language of the country in which they are to be read; Bernal's well-known instance of the vast increase in the number of readers of Dirac's work on quantum mechanics when a standard Russian translation was issued in the U.S.S.R. underlines the advantage of such a procedure.

A Terminology for India

IN this connection India offers a special problem, which is becoming increasingly more urgent now that she is rapidly developing from a purely agricultural into a largely industrial country. The problem is discussed by D. S. Kothari in a recent number of *Science and Culture* (1942, 7, 8, p. 376), and it has for some time been engaging the attention of the Central Advisory Board of Education. We do not pretend to know how many living languages there are in India, but we are prepared to allow the Board's assumption that they may be divided into two main groups, *viz.*, Hindustani and Dravidian. With this assumption in mind, a sub-committee is to be entrusted with evolving a common terminology within each group. Scientific language in India will therefore, it is proposed, consist of (i) an English terminology for universal use, (ii) terms borrowed from the two language-groups mentioned, used according to the affinities of the district concerned, and (iii) terms peculiar to individual languages retained on the grounds of familiarity. A further problem which occurs to us, in respect of chemical formulæ for example, is the alphabetic difficulty; and we should welcome further information on this side of the subject.

E.P.T. and A.R.P.

INDICATION of the effect upon industry of the 100 per cent. Excess Profits Tax is afforded by one of the changes made by the directors of Imperial Chemical Industries in their company's consolidated accounts for the current year. Previously, capital expenditure on air raid precautions had been charged against revenue, but this year that expenditure, which in 1941 amounted to £488,000, has been charged to capital, to be amortised over a period. Maintenance of air raid precautions and the like has been charged against manufacturing and trading profits. Lord McGowan holds out no hope that excess profits will be taxed at anything less than the full amount, at any rate for the remainder of the war. He referred with gentle irony to the Chancellor of the Exchequer's undertaking that the repayment of 20 per cent. of net tax paid at the 100 per cent. rate, promised in the Finance Act, 1941, would accrue by statutory right, provided that the money was not used for dividends or for the issue of bonus shares. He had assumed, he said, that a provision by Parliament in a Finance Act in itself conveyed a statutory right. We see little harm in this tactful reminder to the Treasury that it is, after all, only a department of the Government.

Chemical Engineering Group

Annual Meeting and Luncheon

THE 23rd annual meeting of the Chemical Engineering Group, Society of Chemical Industry, was held at the Waldorf Hotel, London, W.C.2., on May 20, with the chairman, MR. H. W. CREMER, presiding. The following officers for 1942-43 were elected: chairman, MR. S. J. TUNGAY; hon. secretary, MR. R. F. STEWART; hon. treasurer, MR. F. A. GREENE; hon. editor, MR. D. M. WILSON; hon. recorder, MR. H. W. THORP. Messrs. H. W. CREMER (retiring chairman), J. C. FARRANT, J. M. LEONARD (retiring secretary), and N. SWINDIN were elected to fill the four vacancies on the general committee. The report and accounts for 1941 were presented by the hon. secretary, Mr. J. M. Leonard, and the hon treasurer, Mr. F. A. Greene, and were unanimously adopted. In the accounts the only notable change was the drop in subscriptions from £505 to £428; considerable savings, however, were made on printing and postage, and the excess of income over expenditure was £94.

Following the annual meeting, members of the group assembled, with their guests, at a luncheon which was in the nature of a "family" affair, although distinguished guests, in the persons of Mr. B. H. Colquhoun, Dr. J. J. Fox, Dr. William Cullen, Sir Charles McLaren, Mr. J. Davidson Pratt, and others, were present. In a brief and witty speech, Mr. Cremer referred to his three years of chairmanship which were now brought to an end, and to Mr. Leonard's eight years as secretary. Mr. Leonard had seen the group pass through a difficult period. He had put through many innovations, but now increased duties, coupled with ill health, forced him reluctantly to resign. In Mr. Tungay and Mr. Stewart the group had been provided with a chairman and secretary who would undoubtedly carry on the traditions of good fellowship with which they had always been associated. The committee expressed its appreciation of the loyal services rendered throughout the year by the assistant secretary, Mr. C. J. T. Mackie, and his staff.

Association of Scientific Workers

Annual Council Report

THE 25th annual council meeting of the Association of Scientific Workers was held in London earlier this month, under the chairmanship of Mr. R. A. Watson Watt, F.R.S., the new president. Summarising in his address the achievements of the Association during the previous year, the chairman noted that the most important step taken had been the re-registration of the Association as a Trade Union, and its subsequent affiliation to the T.U.C.

Another landmark was the lead which the Association had given to British scientists, by its organisation of the January Conference on "Science and the War Effort." Mr. Watt spoke of the "cushion defences" which had simply absorbed the shock of the well-founded criticisms voiced at that time of the way in which science was being used in the national effort.

The Industrial Committee's report, presented by Mr. Henley, formed an encouraging record of successful action in the Trade Union field. In many instances successful action had been taken to improve rates of payment and conditions of work, and this had been greatly assisted by the policy of co-operation between groups of branches through the medium of area committees, and by the organisation of conferences for special industries.

TREATMENT OF INJURED WORKERS

At a conference of industrial medical officers, labour managers, and trade union organisers to discuss "The Rehabilitation of the Injured Worker," at Manchester University, held last week, speakers drew a sharp distinction between merely curing an injured workman of his disability and rehabilitating him so that he could return as a tried employee to his own job. The Workmens' Compensation Act came in for some criticism, and Dr. E. A. Nicoll, Surgeon-in-Charge at the Miners' Rehabilitation Centre, said there was little doubt that the Act as such would disappear after the war.

Zein in Clay Coatings

Replacement of Casein in the Paper Trade

by C. W. STEWART

THE United States paper trade consumes annually about 55,000,000 lb. of casein in clay coatings, using it as the bonding agent to bind the clay to the paper fibre. The war has brought about a drastic increase in the price of casein, which, during the last two years, has risen from 12 cents to 30 cents per lb. This has caused a diligent search on the part of paper manufacturers for cheaper clay-binding materials. Within the last few years, zein, the alcohol-soluble portion of corn protein, has been developed to a commercial status and has begun to displace other proteins in the coating field. Zein is being produced by the Corn Products Refining Company at their Pekin (Illinois) plant which has a daily capacity of 5000 lb. It is sold under the trade name of "Mazein" and the present price is about 25 c. per lb.

In the past, zein coatings have generally been deposited out of alcoholic zein solutions. In the clay-coating field, the use of alcoholic zein solutions as the bonding medium is impracticable for economic reasons. Recently, however, means have been discovered for producing aqueous zein dispersions by cheaper, non-alcoholic chemicals. It has been found that low-priced materials common to the paper trade, such as rosin size, sulphonated castor oil, sulphonated tall oil, and other miscellaneous soaps and sulphonated oils, are capable of dispersing zein in water. Patent applications on this broad discovery have been filed in the United States and elsewhere. With the availability of economical and stable aqueous zein dispersions, it became possible to consider zein as a competitor for casein in the clay-coating side of the paper industry. Preliminary tests soon showed that satisfactory results could be obtained with zein in place of casein in clay-coating formulæ. It was found, indeed, that from many points of view zein was actually superior to casein. One of its advantages is the ease of its dispersal in water; it is not necessary, as is the case with casein, to soak the protein for several hours and then disperse it with comparatively strong alkali; zein can be readily dispersed in water on the addition of rosin size or sulphonated oils. The amount of zein required per unit amount of clay is less than that required by casein. For example, for ordinary printing paper the ratio of casein to clay is 10 to 100, whereas with zein satisfactory results are obtained with a ratio of 7 to 100.

Drying and Calendering

Drying costs for zein-clay coatings are also lower, as moisture is more readily removed from zein than from casein. With these coatings a substantial reduction either of the temperature of the festoon dryer or of the drying time has been found possible. In the calendering operations, zein also has the advantage. It produces a better gloss than casein and it has been demonstrated that with zein-clay coatings the calendar rolls need no ordinarily be weighted. In half-tone printing work, the smaller the ratio of protein to clay, the better will be the uniformity of the half-tone background. Since with zein less binder is needed, zein clay coatings give more uniform half-tone printing paper than do casein clay coatings.

Typical examples of zein-clay coating formulæ for roll type and brush type paper-coating machines are given below:

I—Roll Type Paper Coating Machine.

Zein	100
Rosin Size	170
Water	1,150
China Clay	1,400

II—Brush Type Paper Coating Machine.

Zein	10
Sulphonated Tall Oil	4
Caustic Soda	0.4
Water	125
China Clay	100

Various modifying agents may be added to the above formulæ to adjust individual conditions existing in specific processes. Foaming may be inhibited by adding suitable amounts of pine oil, mixtures of pine oil and octyl alcohol, butyl alcohol, butyl stearate, amyl alcohol, lecithin, or kerosene. The addition of urea to the zein clay-coating aqueous mixture increases the solubility of the zein and gives a lower viscosity for the same dry substance content, thereby improving operating conditions in the coating machine. Where the drying and penetration of the zein is too rapid, this may be controlled by adding various types of mucilaginous material to the zein-clay formulæ, *e.g.*, starch pastes, cold water swelling starch, viscous chlorinating starches, oxidised thin boiling starches, and non-starch substances such as animal glue, soya-bean protein, blood albumin, algin, and methyl cellulose.

The usual manipulation with the types of sulphonated oils used, the kind of alkali, and the kind of rosin size, all of which are everyday practice in the paper industry, may be applied to zein-clay coatings. Such materials as borax, ammonium hydroxide, triethanolamine, sodium aluminate, hydrogenated rosin size, sulphonated mineral oil, and trisodium phosphate, may all be used under appropriate conditions. At present, zein in clay coatings is being used in the United States for the production of miscellaneous types of paper such as lithographing and book paper. It is also of use with high-gloss paper where greater amounts of protein binder are required.

Soft Solder

Revised Emergency Specification

A WAR emergency revision of B.S.219 for soft solders, just issued by the British Standards Institution, has been undertaken at the request of the Non-Ferrous Metals Control in order to effect economy in tin. As a war emergency soft solders are being restricted to five grades, which it is considered should be adequate under present conditions to meet the great majority of needs.

The foreword states that it is realised that changing the type of solder used may cause some initial inconvenience to users, but the hope is expressed that all users and manufacturers will in the national interest co-operate in this rationalisation to conserve supplies. The specification is accompanied by a memorandum which makes recommendations as to the manner in which economy in the use of solder may be affected, as follows.

Economies Recommended

1. The use of solder may be omitted entirely, as in automobile body patching, or alternative methods of construction adoption; *e.g.*, welding can be used to replace soldered joints. Similarly, where solder baths are used for protective coverings, some other method, such as varnish, should be used.

2. The use of substitute solders which have little or no tin. Silver-lead solders are being developed which can be used for a variety of purposes and where high temperature applications are concerned, lead solder with a very low tin content can be used.

3. Use of low tin solder. Where it is essential to continue the use of solder, the solder should have the minimum tin content that can be used satisfactorily for the purpose. For example, the solder used for dipping baths should contain no more than 20 per cent. tin in place of the 50 per cent. now frequently adopted.

4. Salvage. Every possible means of avoiding waste and reclaiming scrap and metal from dross should be adopted.

Copies of this specification may be obtained from the British Standards Institution, 28 Victoria Street, London, S.W.1, price 2s. 3d. post free.

A CHEMIST'S BOOKSHELF

PLASTICS IN INDUSTRY. By "Plastes." 2nd Ed. London: Chapman and Hall. Pp. 248. 15s.

We are glad to welcome a second edition of *Plastics in Industry* only a year after our first review. The nice balance between technical and popular exposition has evidently been well received by the particular public which it was the main purpose of the book to instruct in the possibilities of the new materials. How vast this public is can best be visualised by reference to a few of the chapter headings: The Electrical Industry, Aircraft Construction, Building Industry, Synthetic Rubber, Fancy Goods Trade and Furniture Manufacture. The chemist has long known, of course, that plastics are destined to become just as much a feature of civilisation as metal, glass, stone, and wood.

The authors have striven for accuracy and a few errors in the first edition have now been rectified. Several chapters also contain additional information, but the full story of war-time applications of plastics is necessarily deferred.

ANNUAL REPORT OF THE SMITHSONIAN INSTITUTION, 1940. Washington: U.S. Government Printing Office. Pp. 512. $1.50.

The 1940 Smithsonian Report, just received, contains among its contents, which cover the usual wide range of interest, an article by Dr. C. W. A. Stine, of Du Pont's, describing the rise of the organic chemical industry in the U.S., and one by Dr. W. W. Spink on sulphanilamide and related chemicals. So fast does chemical discovery move nowadays that these articles already seem almost historical. At the same time it is comforting to read, in "The Search for Oil," by G. M. Lees, that 83.43 per cent. of the world's oil production (1938 figures) is accessible to the Allies; that 71.56 per cent. came from the U.S.A. and U.S.S.R.; and that the total percentage produced by the oilfields now overrun by the Japanese amounted to only 3.49. Axis oil supplies are somewhere in the region of 3.07 per cent. of the world aggregate.

AN INTRODUCTION TO THE CHEMISTRY OF CELLULOSE. By J. T. Marsh and F. C. Wood. 2nd Ed. London: Chapman and Hill. Pp. 512. 28s.

In the opening sentences of a text-book written nearly a generation ago it is stated that the constitutional formula of cellulose is as yet unknown and that, if it were, the chemistry of cellulose could be written in a few sentences! In no sense can the present authors be accused of verbosity, yet the wealth of knowledge they have compressed into some 500 pages is, even to-day, modestly offered as an introduction to the subject.

The first edition of this work was well received and the appearance of a second edition after a lapse of only three years testifies that it has found its place among the modern reference books on cellulose. Like its predecessor the present volume is divided into five parts, but although the original headings have been retained, the subject matter itself has been extended in the light of recent knowledge and a notable improvement has been effected by treating "constitution and structure" at the beginning rather than the end of the work.

The authors are well known for their scientific contributions to the textile industry in which they are still actively engaged. Their view (page 235) that most research on cellulose has some technical significance and therefore applies to material with some textile value indicates clearly where their interests lie and accounts, no doubt, for the somewhat sketchy introduction in which the various forms of native cellulose are compared. Throughout the book cellulose is exemplified mainly by the products obtained from cotton, flax, and ramie, although wood pulp is mentioned in connection with viscose manufacture.

The chapter on constitution (Part II) is an admirable account of an intricate subject. The link between the new structural formulæ of Haworth and his co-workers, on the one hand, and the conception of the chain molecule as revealed by X-ray examination and molecular weight determinations is carefully established, and a lucid and unbiassed account is given of the many conflicting views on the influence of structure on the physical properties of cellulose. Continuity seems to be somewhat broken by the inclusion in the chapter on chain molecules of descriptions, intensely interesting in themselves, of many fibrous materials both natural and synthetic, which with few exceptions are related to cellulose only in the sense that they consist of chain molecules, but, to the textile scientist, the textile value of a material is of interest whatever its origin.

Part III, on dispersed cellulose, follows the original text closely, but is supplemented by a series of X-ray diagrams illustrating the effect of dispersion processes on structure. Part IV, on modified cellulose, has been supplemented by a section on "hydrocellulose and the chain molecule" and the chapter on oxycellulose has been considerably enlarged. Part V, on the derivatives of cellulose, still remains one of the most valuable parts of the book. Its compilation has obviously involved much labour on the part of the authors, but in thus bringing together existing knowledge in a very active field they should earn the thanks of student, research worker, and industrialist.

Chapter 22, entitled "Some General Considerations," is a new and valuable addition to the book. It is a summary of applied cellulose chemistry based on twenty years' experience in textile technology which, because of the helpful advice it contains, will bear reading many times by all who, from whatever angle, are interested in cellulose.

THE PROJECTED GRAND CONTOUR CANAL. By J. F. Pownall. Birmingham: Cotterell and Co. Pp. 35. 2s.

There are many reasons why inland water transport has never been seriously developed in this country, and this is hardly the place to discuss them. But it can be safely stated that the war has brought home to us the inadequacy of land transport, whether by road or rail, and its excessive cost in many instances. In the booklet under review Mr. Pownall states the case for a large-scale canal, following the 300-foot contour, which represents the average level of the cols separating most of the principal river systems of England. The canal would run roughly south from Newcastle to Bradford and Manchester, thence south-east to Rugby and the London district; another branch would run west from London towards Bristol, with a branch towards Southampton and a connecting link with the main canal near Rugby. Connection with sea-level and with existing canal systems would be made by lifts (which conserve water) rather than by locks (which consume it).

Details of construction and finance are thoroughly worked out in the book; here we are concerned rather with its application to the chemical industry. Two points strike the eye at once: (i) the possibility of cheap transport for raw materials to chemical factories, which at present are barred from their ideal raw material (*e.g.*, anthracite) owing to transport costs; and (ii) the subsidiary idea of laying pipes beneath the canal-bed for the conveyance of industrial fluids, such as petroleum products, salts in solution, trade wastes, coal gas, compressed air, and oxygen.

It is stated that the project will in due course go before the industrial public for full consideration. If the estimated charge of 0.48d. per ton mile, which includes interest on capital, can be substantiated in practice, the scheme would certainly appear to possess real advantages to industry.

"*London Romance*" is the theme of the new colour charts issued by the BRITISH COLOUR COUNCIL for Autumn and Winter, 1942. All the colours in the range, which include Lambeth Rose, Guildhall Red, Chiswick Blue, Trafalgar Blue, etc., conform to the Dyestuff Controller's Orders governing maximum depths, and if the situation demands that there should be further restrictions in regard to colours and designs the Council will meet it; if, on the other hand, the situation allows of a wider variety the Council is prepared. The services of the Council will ensure that dyestuffs are available for the colours promoted, although the exigencies of war may from time to time demand the withdrawal of certain dyestuffs.

The Mellon Institute

Industrial Research for the Current Year

OUTSTANDING at the Mellon Institute of Industrial Research, University of Pittsburgh, during the year ended February 28, has been the growth of the industrial research staff to 205 fellows (from 187) and 150 fellowship assistants (from 114). The services of these scientists and engineers have been required on the 95 industrial fellowships in operation. The war situation has caused considerable expansion in the activities of certain fellowships, particularly those concerned with coke by-products, and special studies for Federal Government agencies have been undertaken by the fellowships dealing with heat-insulation, petroleum, plate glass, protective coatings, synthetic organic chemicals, and tar synthetics. During the fiscal year to March 1, 1942, the Institute has expended $1,378,752 in carrying on its researches. These particulars are brought out in the 29th annual report of the director, Dr. E. R. Weidlein, to the trustees of the institution.

Investigations of the Industrial Hygiene Foundation have been concerned with the effects of arc-welding fumes on susceptibility to tuberculosis, to the reactions of living tissues to silica granules, to the appraisal of X-ray films for use in physical examinations in the industries, and to the evaluation of present exhaust ventilation for the control of industrial health hazards. Since early in 1941 the Foundation has been studying sick absenteeism in the industries. Fatigue is another topic that receives constant consideration. The report also includes a review of the work on aluminium powder as a possible preventive in silicosis.

Nine new industrial fellowships started on their researches during the year: calcite technology, coke-plant construction materials, fur, lock-nut technology, naphthalene chemistry, packing, pine chemicals, tape technology, and tar constituents. Fifty-three United States Patents have been issued on fellowship inventions.

Waste Pickle Liquor

Of special interest is the information set forth regarding continued industrial fellowship researches. Anthrafloss is a high-grade mineral wool for insulating purposes made from anthracite by-products by the multiple fellowship of Anthracite Industries, Inc. The multiple fellowship on heat insulation and roofing has aided in the development of an efficient insulating material suitable for temperatures up to 1500° F. (815° C.). A notable result of the research programme of the multiple fellowship on plastic metals has been the construction of a large commercial sponge-iron plant. The research of the multiple fellowship of the American Iron and Steel Institute on the utilisation of waste pickle liquor has been conducted on five potential processes for the recovery of values from this industrial waste; including the recovery of free sulphuric acid and copperas, the manufacture of iron carbonate and ammonium sulphate, the production of magnesium from low-grade ores by leaching with waste pickle liquor, and the preparation of sodium sulphate and ferric chloride. The multiple fellowship on plate glass technology has brought about substantial advances in methods for evaluating flatness and surface texture. Garspar, Garcolite, and Gartex are being made commercially from waste grinding sand as a result of the research and development work of the mineral products fellowship. New markets have been evolved for Garspar in the fields of pottery and glass; Garcolite has been used as a pulverulent aggregate in concrete; Gartex is a processed filler for rubber, plastics, and paints.

The multiple industrial fellowship on sulphur has devoted its main study to sulphur cements, to the reaction of gaseous olefines with sulphur, and to the employment of sulphur as a filter medium. The efficiency of sulphur in removing sediment from water was found to equal or surpass that of sand filters. The multiple fellowship on gas by-products has made many new inorganic and organic thiocyanates. A novel series of rubber accelerators has been discovered by this group. Other fellowships are investigating the upgrading of the components of coke-oven light oil, the physical properties of tars and pitches and their improvement, new products from tars, and problems of waste disposal in the by-product coking industry. A process has been devised for the commercial recovery of cyclopentadiene, of great interest as a potential copolymer in the preparation of synthetic rubber and resins. Several types of natural gasoline and casing-head gasoline have been shown to contain amounts of isobutane and isopentane which make them desirable sources for alkylation materials and for the production of 100-octane aviation fuel. The feasibility of installing a butane extraction plant has been demonstrated; normal butane is useful in the manufacture of butadiene for synthetic rubber production.

Petroleum Research

Petroleum research fully employed another multiple fellowship which has been in operation since 1911. The study of the chemical constitution of high-melting waxes has been carried on as has also that of the over-all chemical nature of crude petroleums. The twenty-eighth year of the operation of the multiple fellowship on organic synthesis has pursued the development of new products and the utilisation of these chemicals to meet changing demands of industry. Investigations on the manufacture and applications of amines, detergents, lubricants, hydraulic fluids, and synthetic resins have been successfully prolonged. Research on oil additives has revealed compounds with marked detergent and anti-oxidation properties.

The fellowship on bone products has announced methods for obtaining higher yields and grades of glue; this fellowship has lately been studying granular adsorbents for use in sugar refining. The fellowship on rubber technology is increasing its staff for fundamental studies of underlying problems of the industry. Of interest in connection with plastics is the multiple fellowship that is engaged in research on polymerisable silicon compounds. Likely uses of these silicon derivatives are many and varied; certain applications have been proposed which have potential utility in warfare. Fellowship research is also being conducted on the employment of plastics in water and gas meters and for many other purposes.

Organic Chemistry Lectures

Oil and Colour Chemists' Programme

LAST year the London Section of the Oil and Colour Chemists' Association, under the inspiring leadership of its chairman, Dr. H. W. Keenan, introduced a new principle, the giving of post-graduate lectures, to be delivered by acknowledged leaders in the various divisions of chemical thought. As a beginning, Dr. Emeléus gave two lectures on inorganic chemistry. This year it is proposed to consider organic chemistry, and Dr. H. B. Watson of the Technical College, Cardiff, has accepted an invitation to give three lectures upon a subject which he has made peculiarly his own. In these lectures, entitled "Modern Views of some Reactions of Organic Compounds," the lecturer will correlate the properties of some important types of organic reactions, substitution, addition, and isomeric changes.

The lectures will be held on Thursdays, June 18, June 25, and July 2 at 6.30 p.m. in the Lecture Room of the Chemical Society, Burlington House, London, W.1, and the inclusive cost to members and their friends or other visitors who may wish to be present, is 10s. Application should be made, together with the appropriate remittance, to the Hon. Secretary of the London Section, Mr. David E. Roe, c/o Atlas Preservative Co., Ltd., Fraser Road, Erith, Kent.

Personal Notes

MR. HENRY MORGAN, F.S.A.A., has been elected president of the Association of British Chambers of Commerce in succession to Sir Ronald Matthews.

DR. W. D. MCFARLANE, professor of chemistry at Macdonald College, has been elected chairman of the Montreal section of the Society of Chemical Industry at the annual general meeting.

MR. H. H. BERRESFORD, managing-director of the Staveley Coal and Iron Co., Ltd., Chesterfield, and a director of many other important industrial concerns, has joined the Board of Directors of the Clayton Aniline Co., Ltd., Manchester.

MR. FRANCIS EDMOND, who has been elected President of the Institute of Mining Engineers in succession to the late Mr. E. O. Forster Brown, is a past president of the Manchester Geological and Mining Society, and is director and general manager of the Wigan Coal Corporation, Ltd.

MR. J. MALCOLM NEWMAN has been appointed controller of non-ferrous metal production in Australia. In order to assist his work the scope of the Commonwealth Copper and Bauxite Committee has been extended to cover all types of minerals and the title will be changed to the Minerals Committee.

The following have passed the April examination for the Fellowship of the Institute of Chemistry: in organic chemistry: NORMAN SENIOR, HERBERT GEORGE WESTLAKE (with special reference to pharmaceutical chemistry). In the chemistry, including microscopy, of food and drugs, and of water: DONALD COLIN MALCOLM ADAMSON, HENRY FRANCIS FROST, CECIL HANCORN ROBINS, and CHARLES HARCOURT WORDSWORTH. In agricultural chemistry: JOSEPH TINSLEY. In industrial chemistry, with special reference to coke and by-product manufacture: FRANK KNOWLES ILLINGWORTH.

Obituary

MR. ANGELO SEBASTIN DUSSEK, founder of the firm of Dussek Brothers and Co., Ltd., who died at Chislehurst on May 14, aged 74, has been connected with the firm for over 50 years, and had been chairman and managing director since it became a limited company in 1905.

DR. SYDNEY ANDREW MANN, D.Sc., F.I.C., who died at Epsom on May 15, age 60, was formerly research biochemist and Lecturer in Biochemistry at the L.C.C. Central Pathological Laboratories, Maudsley Hospital, S.E.5. He was elected a Fellow of the Institute of Chemistry in 1922.

SIR THOMAS OLIVER, M.D., F.R.C.P., who died on May 15 at Newcastle-upon-Tyne, aged 89, was Emeritus Professor of Medicine in the University of Durham. He had been a good friend to industrial chemists and chemical workers, as he had devoted a great part of his life to research on industrial diseases, particularly those resulting from dangerous trades, such as the manufacture of lucifer matches, white lead preparation, and pottery glazing.

PROFESSOR WILLIAM JOHN YOUNG, M.Sc., D.Sc., whose death is reported from Australia, occupied the Chair of Biochemistry at Melbourne University. Born in Manchester in 1878, he was educated there at Hulme Grammar School and the University. After 10 years at the Lister Institute in London he went to Australia in 1912 with a biochemical appointment at Townsville, Queensland. He had held his professorship at Melbourne since 1919, and was a Doctor of Science in the Universities of London and of Melbourne.

New Control Orders

Rubber Gloves

UNDER the Rubber Gloves Order (S.R. & O. 1942, No. 918), gloves made wholly or partly of rubber may not be supplied except against a certificate signed by one of H.M. Inspectors of Factories (or a person specially authorised by the Government department concerned) and endorsed by the person to be supplied with his name. Traders to whom certificates in this form are surrendered may pass them back endorsed with their name to their own suppliers in order to obtain replacement. If they have no rubber gloves in stock they may accept the certificate and pass it back in order to obtain gloves to fulfil the order. Supplies to Government Departments and by direct export are exempt, and also supplies of sports gloves and gloves which contain rubber only as elastic in the wrist. Industrial concerns covered by the Factories Act, 1937, may apply forthwith to H.M. Inspectors of Factories. Certificates will be given only where the industrial need is considered essential and where no substitute is available.

British Chemical Prices

Market Reports

THERE have been no price changes of importance in the industrial chemicals market during the past week and a firm tone is reported from most sections. Trading conditions are following a steady course and a moderate volume of new inquiry has been in circulation, while a quiet export trade has been maintained. Deliveries to the main consuming industries, chiefly against contracts, have been steadily maintained. Most of the potash materials continue in short supply, and among the soda products offers of yellow prussiate and of chlorate are insufficient to meet current requirements; values for these products are firm, while hyposulphite of soda is in active request. There is a good call for both oxalic acid and acetic acid and available parcels of tartaric and citric acids are finding a ready market. In other directions, white powdered arsenic is in steady request and British-made formaldehyde is firm on a strong demand. The lead oxides continue to enjoy a steady trade with quotations unchanged. A quietly active trade is reported for most of the coal tar products and deliveries under existing commitments have been on a fairly good scale. A steady movement has taken place in creosote oil, crude and crystal carbolic acid, and cresylic acid. Solvent naphtha and the xylols are a quiet market and a moderate inquiry for pitch is reported.

MANCHESTER.—The rubber-manufacturing, paint, and textile and allied trades in the Lancashire district are calling for steady contract deliveries of a wide range of chemical products, and traders on the Manchester market during the past week have reported that, on the whole, conditions in this respect are reasonably satisfactory. There has been a moderate volume of inquiry circulating from home-consumption channels, with scattered interest also on export account. Quotations for the principal products show little change compared with a week ago. The tar products are mostly on a firm basis and good quantities are moving into consumption.

GLASGOW.—There is no change from last week in the Scottish heavy chemical trade. Home trade remains normal. Export business is still very difficult. Prices keep very firm.

Price Changes

Antimony Sulphide.—Golden, 1s. 2d. to 2s. 2d. per lb. Crimson, 2s. 2d. to 2s. 6d. per lb.

Carbon Black.—6d. to 8d. per lb., according to packing.

India Rubber Substitutes.—White, 6 1/16d. to 6 9/16d. per lb. Dark, 6d. to 6½d. per lb.

Pyridine.—90/140, 18s. per gal.; 90/160, 13s. to 14s. MANCHESTER: 14s. to 18s. per gal.

Vegetable Lamp Black.—£45 per ton.

Xylol.—Commercial, 3s. to 3s. 2d. per gal.; pure, 3s. 6d. MANCHESTER: 2s. 10d. to 3s. 3d.

CLOTHING COUPONS AND THE B.A.C.

When the question of coupons for clothing first arose the British Association of Chemists immediately approached the Board of Trade on behalf of chemists. Negotiations have been in progress throughout this period, and the Board of Trade has now appointed the Association to administer clothing coupons in connection with laboratory coats and boiler suits, for all chemists and assistants, whether members of the Association or not. Where more than twelve coupons have been expended in the replacement of four laboratory coats, or three boiler suits, for the period ending May 31, 1942, evidence of this should be produced to the Association, with any claim for additional coupons to replace those used in excess of twelve coupons.

I.C.I. Annual Report for 1941

Volume of Exports Maintained—Difficult Financial Conditions

THE directors of Imperial Chemical Industries, Ltd., have repeated last year's procedure by circulating their annual report and balance sheet along with the chairman's address to stockholders. The fifteenth annual general meeting, which will be purely formal, is to be held at Nobel House on May 28.

In his statement to stockholders Lord McGowan, the chairman, records two changes in the board, brought about by the death of Mr. H. J. Mitchell and the retirement of Sir Christopher Clayton.

"As a result of the insistent pressure of the war for more and more production," Lord McGowan continues, "our factories have worked to full capacity throughout the year. The performance of the various plants has been maintained at a high level and testifies to the excellence of the equipment, the standard of the maintenance which it is our practice to keep, and the technical control. The volume of output to meet demands has for a number of products touched new peaks."

They had continued their basic price policy, which was to approach every case with a general reluctance to advance the price and not to move unless convinced of the need for a change by the emergence of factors likely to be permanent, or unless a change was called for by the general symmetry of the price structure for related products. Where the expansion of demand and growth of efficiency made it possible, they had made price reductions, notwithstanding all the conditions of war.

Overseas Developments

Looking back on the difficulties with which their efforts to promote export trade had been surrounded, they were surprised by the degree in which volume had been maintained. But with the willing co-operation of all those with whom they worked in this sphere of activity, and above all with the indomitable courage of the merchant sailors and the high degree of protection afforded by the Royal Navy, and, during much of the year, by the silent vigil of the United States Navy, goods had moved to their distant destinations.

On the financial and commercial sides they had continued to enjoy the invaluable co-operation of the United Kingdom Commercial Corporation, the extension and the success of the overseas activities of which must be a source of satisfaction to those responsible. For a substantial overseas market area they had also benefited by the willing assistance afforded by their subsidiary or associated companies in the British Empire, as well as by their American friends, notably Messrs. E. I. du Pont de Nemours and Co., of Wilmington, U.S.A.

Their main manufacturing subsidiary or associated companies in the British Empire—Imperial Chemical Industries of Australia and New Zealand, Ltd., Canadian Industries, Ltd., and African Explosives and Industries, Ltd.—had continued their successful progress. Within the limitations of shipping, exchange resources and locally available materials, they had continued to expand their own activities, which had grown with the intensity of the war effort. Canadian Industries, Ltd., in particular, had experienced an expansion of activities which might well fill those responsible for that company with pride, though they had suffered a profound tragedy through the loss of their president, the Rt. Hon. Arthur B. Purvis.

The unprovoked attack by Japan upon the United States and the embroilment of the whole of the Far East had vitally affected their companies there. In Japan, their commercial activities practically ceased some time ago, but in china and Malaya, the trading activities of the merchanting companies I.C.I. (China), Ltd., and I.C.I. (Malaya), Ltd., had continued up to the date of the outbreak with ever increasing success. They had, however, not been unmindful of the risks of carrying on business in these areas, and had from time to time made ample provision against contingent losses in the territories now occupied by the enemy in the Far East.

Research activities during 1941 again covered a wide field. They embraced problems arising out of new plant conditions brought about by war circumstances, such as the substitution of novel raw materials for normal ones now unprocurable and the development of entirely new products of both present national and possible future commercial importance. Their research staffs in this task had shown much original, and ingenious thinking, while their readiness and capacity to render assistance had been highly appreciated.

War conditions call for the development of research ideas through the semi-technical stage to full scale operation much more rapidly than does peace and particular attention had been given to the development of new projects. Important materials were being supplied by processes which not long since were in the hands of the laboratory staffs. The company was collaborating with other concerns in the country, where exchange of technical information appeared to be in the national interest, and in some instances was voluntarily supplying its technique to industry.

The Consolidated Accounts

The consolidated accounts show the combined assets and liabilities and the combined income of Imperial Chemical Industries, Ltd., and 105 subsidiary companies. The audited accounts of 14 subsidiaries are not available for consolidation; ten of these, situated in enemy or enemy occupied countries, have been written down to an aggregate book value of £11; of the four others, three had made profits but the final accounts are delayed.

It has hitherto been the company's practice to show in the accounts an appropriation from profits to the workers' pension fund, amounting to about £180,000 a year, and the same provision figures in those accounts for 1941. Shown thus, however, these figures are inadequate and fail to represent the total contribution by the company to the pension funds. This year, therefore, in the consolidated income account, the total of the company's contributions to the contributory pension funds is shown, together with the amount of other pensions and allowances. Another change made in the consolidated accounts this year is that whereas previously capital expenditure on air raid precautions was charged against revenue, that expenditure, in 1941 amounting to £488,000, had been charged to capital.

The total gross income shown in the consolidated income statement is £19,956,000, compared with £19,016,000 for 1940. This increase of £940,000 is largely to be ascribed to the expansion of activities. Net consolidated income declined from £6,576,000 to £6,243,000, a fall of £333,000 Once again the conversion of an increase of £940,000 in gross income into a reduction of £333,000 in net income was due to taxation. The net burden from this cause to be borne by the company and its subsidiaries was £8,762,000, compared with £7,385,000 last year, or an increase of £1,377,000. The year 1941 was the first in which the liability to excess profits tax for the whole calendar year was 100 per cent.

"Industry and stockholders may now assume," the chairman said, "that for the remainder of the war the excess profits tax will continue at that full limit. Requests for modifications of the structure of this tax have recently been placed before the Chancellor of the Exchequer by responsible bodies, but we regret that in the recent Budget he found himself unable to make any modifications, other than to undertake that the repayment of 20 per cent. of net tax paid at the 100 per cent. rate, promised in the Finance Act, 1941, would accrue by statutory right, provided the money is not used for dividends or for the issue of bonus shares." The company's total reserves and carry forward amounted at December 31, 1941, to £22,255,000, an increase of £1,108,000 over the corresponding total last year.

General News——From Week to Week

Besides the eight new Fellows of the Institute of Chemistry, whose names are recorded in our " personal " column, 26 new Associates are announced as having passed the April examination in general chemistry for the A.I.C. degree.

A travelling exhibition of chemical products which are playing a vital part in winning the war has been arranged by I.C.I. It has already been shown to their workers in three Northern centres, and is now on view in London.

The Board of Trade announces that the whole of the Trading with the Enemy Department, with the exception of the Enemy Debts Registration Section, which is still at New Oxford House, is now at 24 Kingsway, London, W.C.2. (Tel. HOLborn 4300.)

Experiments on the treatment of cotton and rayon with tin compounds to reduce tendering on exposure to light having been discontinued on account of the inadequate degree of improvement secured, the Tin Research Institute is now collaborating with the Research Department of the Indian Jute Mills Association in the treatment of jute with tin compounds.

Three small tin mines have recently been reopened in Cornwall, and the Non-Ferrous Mineral Development Control is investigating the more promising mines, dumps, and alluvial deposits, according to a statement by Mr. Lyttelton in Parliament. Efforts, however, are being made to concentrate available skilled labour and material on the principal producing mines.

The staff of a well-known London firm of engineers, several members of which have near relatives in German prison camps, have unanimously decided to double their weekly contributions to the Red Cross Penny-a-Week Fund and to include the profits of their canteen. The management has also decided to add an amount equivalent to the additional sum raised each week.

From June 1 the supply of soap to catering establishments and institutions will be reduced by 20 per cent., but they will be free to take up their allowance in whatever type of soap they desire, and will not be restricted to the particular types of soap that they previously used. A leaflet giving full details of the new arrangements will be issued by Food Offices to all catering establishments and institutions, together with the necessary forms for making application for revised permits.

The Particulars of Scrap Metal (No. 1) Order (S.R. & O. 1942, No. 761) obliges every occupier of premises in the London Civil Defence Region, the County Borough of Bristol, and the counties of Essex, Dorset, Nottinghamshire, Leeds, Monmouthshire, and East, West, and Mid Lothian, to make a return to the Minister of Works and Buildings, on a form laid out in the first schedule to the Order, of any scrap metal of more than 3 tons in aggregate on the premises which they occupy.

Wholesale prices in April for industrial materials and manufactures stood at 159.2, as measured by the Board of Trade index number (1930=100). This makes a rise of 0.2 per cent. over March, and of 4.7 per cent. over April, 1941. The figure for chemicals and oils was 134.3 (March, 134.2), for non-ferrous metals 125.4 (March, same), and for iron and steel 182.7 (March, 182.2). There were few important changes in chemical prices in April; barium chloride, which became 26 per cent. dearer in March, rose further by about 12 per cent.

Foreign News

Quinine production in the West Indies was the subject of a question in the House of Commons last week, when Mr. Harold Macmillan stated that although he was aware that cultivation of cinchona had existed in Trinidad for many years, for technical reasons it was considered inadvisable to develop the production of quinine in the West Indies at present.

The yield of sesamum in India for the season 1941-42 is reported by the *Indian Trade Journal* to be 396,000 tons compared with 401,000 tons for 1940-41, although the total acreage under the crop rose some 2 per cent. to 3,950,000 acres. In most districts the crop is reported to be 77-78 per cent. of normal, owing to deficient rainfall, though some favoured areas record a percentage as high as 92 per cent. of normal.

Imports into British Guiana are now subject to control under the Commodity Control Board, the formation of which was announced in the British Guiana Official Gazette last March. The Board, consisting of five members, also controls maximum prices, and bulk purchases on Government account.

Sales in Canada of fertiliser materials amounted to 74,500 short tons during the year ended June 30, 1941, compared with 85,600 tons in the twelve previous months, according to the Dominion Bureau of Statistics. Sales of mixed fertilisers amounted to 249,700 and 261,000 tons, respectively.

Local Government reports state that the number of tung trees in the State of S. Paulo, Brazil, now exceeds 700,000. The production of nuts in 1939—the latest year for which figures are available—was 350 tons, but the yield in 1942 will be many times that figure, and a modern plant for the extraction of the oil is being erected.

The German metal-trading combine, Metallgesellschaft, has formed subsidiaries in Holland and Norway—N.V. Montaan Metallhandel, Amsterdam, and Metall & Lurgi A.S., Oslo—and will expand its activities in other countries. The French subsidiary, S.A. d'Exploitation des Procédés Lurgi, has altered its name to Métal & Lurgi S.A., Paris.

New factories, many of them moved from Japanese-occupied territory, are springing up all over south-west China, says a Reuter message from Chungking. The Chinese Vice-Minister for Economic Affairs stated that during an extensive tour of inspection through this region he found iron and chemical works in almost every province. Production is increasing and these factories are already able to supply at least a part of Free China's needs.

Sodium cellulose glycollate is used on a substantial scale in Germany as a substitute for gum arabic, agar-agar, tragacanth, etc. It is made by six factories which offer about 40 different preparations. Cellulose ethers with low viscosity are used for sizing and dressing in the textile industry. Preparations with medium and high viscosity are employed as emulsifiers, binding agents in the paint industry, and adhesives, and sodium cellulose glycollate is also expected to find its way soon into the food industry.

An annual accumulation of 500,000 tons of waste molasses from the sugar refining industry is reported to be the subject of intensive research in India, with a view to converting it to some useful purpose. Power alcohol from molasses has been adapted for mixing with motor fuel, and road-surfacing compositions have been produced. Efforts are now being directed to the extraction of potassium salts and the recovery of organic products, including citric and oxalic acids and butyl alcohol and acetone.

Forthcoming Events

On **May 27,** the **Colour Group** of the Physical Society will meet at 2.30 p.m. in the Rooms of the Royal Photographic Society, 16 Prince's Gate, S.W.7, to discuss " The Relative Merits of Spectrophotometry and Colorimetry." The opening paper is by Miss D. L. Tilleard, of the Paint Research Station.

Dr. H. Baines, F.I.C., will deliver the first presentation of his lecture on " Recent Advances in Photographic Theory " at 6 p.m. on **May 27,** at the **Institute of Chemistry.** The second presentation will be on **June 17,** at 6 p.m., in the Chemistry Lecture Theatre of West Ham Municipal College, E.15.

Mr. H. C. Plummer, F.R.S., will present a paper on " Galileo and the Springtime of Science," at a meeting of the **Royal Institution of Great Britain,** to be held at 21 Albemarle Street, W.1, at 5.15 p.m., on **May 29.**

There will be a meeting of the **Electrodepositors' Technical Society** (Midlands Centre) at the James Watt Memorial Institute, Great Charles Street, Birmingham, at 6 p.m., on **June 2.** The " Electrodepositors' Brains Trust " will hold an initial session on that date, and members are asked to forward questions in advance. (Question Master, Dr. S. Wernick.)

Commercial Intelligence

The following are taken from printed reports, but we cannot be responsible for errors that may occur.

Mortgages and Charges

(Note.—The Companies Consolidation Act of 1908 provides that every Mortgage or Charge, as described therein, shall be registered within 21 days after its creation, otherwise it shall be void against the liquidator and any creditor. The Act also provides that every company shall, in making its Annual Summary, specify the total amount of debt due from the company in respect of all Mortgages or Charges. The following Mortgages and Charges have been so registered. In each case the total debt, as specified in the last available Annual Summary, is also given—marked with an *—followed by the date of the Summary, but such total may have been reduced.)

SOYA FOODS, LTD., Rickmansworth. (M., 23/5/42.) May 1, debenture (ranking in priority to existing series of debentures), to Lloyds Bank, Ltd., securing all moneys due or to become due to the Bank; general charge. *£6000. July 16, 1941.

TAMPIMEX OIL PRODUCTS, LTD., London, W.C. (M., 23/5/42.) May 1, charge supplemental to charge dated November 25, 1941, to Merchants & General Finance Corporation, Ltd., securing all sums due or to become due to the chargee inclusive of the maximum amount at any one time outstanding of £20,000 secured by said charge dated November 25, 1941; general charge. *——. September 14, 1941.

Receiver Ceasing to Act

IRTHLINGBOROUGH CHROME TANNING CO., LTD. (R.C.A., 23/5/42.) H. C. Palmer. April 23.

Company News

B. Laporte, Ltd., have declared a final dividend of 10 per cent., making 15 per cent. (same) for the year to March 31, 1942.

Chemical Service Company, Ltd., Vintry House, Queen Street Place, E.C., has increased its nominal capital beyond the registered capital of £100 by the addition of £9900 in £1 ordinary shares.

Chemical and Allied Stocks and Shares

HOPES attaching to the latest phase of war developments aided sentiment in the stock and share markets, and security values tended to improve under the lead of British Funds. Markets were also assisted by satisfaction with important financial results and dividend announcements that have come to hand. The full report and annual statement of Imperial Chemical Industries created a very good impression, the results being regarded as an excellent achievement, bearing in mind the world-wide ramifications of the business, while despite the difficult times, finances show further expansion. It is apparent the company is well placed to play its vital part in the war effort, and the market remains very hopeful that it may be possible to keep the dividend at 8 per cent. during the period of the war. I.C.I. ordinary units have been well maintained at 33s. 9d., at which the yield compares favourably with that obtainable on many other leading industrial securities; the 7 per cent. preference units were quoted at 35s. 1½d.

In other directions B. Laporte remained at 63s. 9d., aided by the maintenance of the dividend at 15 per cent. Moreover, elsewhere, Imperial Smelting have further improved to 10s. 6d. at the time of writing. Birmid Industries shares moved higher at 67s. 6d., and there appeared to be rather more activity in British Oxygen ordinary, which were 67s. 9d. British Aluminium were 43s. 3d., while British Match, which remained under satisfaction with the maintenance of the dividend, were 33s. 6d. There was again activity in Dunlop Rubber ordinary units, the dividend being in accordance with general market estimates. Further improvement to 29s. 6d. was shown in Barry & Staines, more hopeful views of the forthcoming dividend having developed in this case.

Nairn & Greenwich were 51s. 3d.; the interim dividend is due in a few weeks. Fison Packard were again 38s. 9d., and Borax Consolidated 31s. Allied Ironfounders were inclined to ease and were 24s. 3d., but among other shares whose dividends are due before long, Amalgamated Metal were unchanged at 14s. Lever & Unilever had a steady appearance at 25s. 3d., but British Plaster Board eased to 20s. 3d. There was again a fair amount of activity in British Industrial Plastics 2s. ordinary, which were around 4s. Lacrinoid Products continued to change hands, while Erinoid 5s. ordinary transferred up to 8s. 3d. On the other hand, there has been a sharp marking down of British Drug Houses to 18s. 9d. on the lower dividend and profits, which arise from the fact that taxation bears very heavily on the company owing to its inequitable E.P.T. standard. Boots Drug were firmer at 33s. 3d.; the final dividend falls to be declared next month. Firmness was shown in Cerebos at £8⅞, awaiting the results, due next month.

Iron and steel issues failed to participate in the rather better conditions on the Stock Exchange, but Stewarts & Lloyds were steady at 45s. 4½d., as were Tube Investments at 82s. Richard Thomas ordinary at 5s. 4¼d. were slightly better as compared with a week ago. Following earlier small declines, United Molasses rallied to 27s. 7½d. and Triplex Glass 10s. ordinary to 29s. 10½d. The market is hopeful that the dividend on the last-named may be increased to 15 per cent., it being pointed out that in the previous year a non-recurring loss arising from the sale of a subsidiary was charged to profits. Attention has been given to Turner & Newall, which have improved to 68s. 4½d. at the time of writing; it is generally expected that the forthcoming interim payment will be maintained. The units of the Distillers Co. have been a strong feature with a rise from 74s. 3d. to 75s. 3d., which reflects market confidence that the distribution is likely to be kept on a 16⅔ per cent. basis. Monsanto Chemicals 5¾ per cent. preference shares were again 22s. 6d. Goodlass Wall 10s. ordinary were maintained at 8s. 9d. aided by satisfaction with the repetition of the dividend at 6 per cent. Oil shares showed moderate movements; the "Shell" interim dividend decision is due next month.

New Companies Registered

Bombay Mills, Ltd. (373,747).—Private company. Capital: £1000 in 400 preferred ordinary and 600 ordinary shares of £1 each. Mills for pulverising or grinding mineral or organic substances and all kinds of materials, including metals, shellac, glues, mica, cereals, gelatines, and ochres, and for blending gelatines and powders, etc. Directors: J. J. Vigor; C. F. Brockwell. Registered office: 76 New Cavendish Street W.1.

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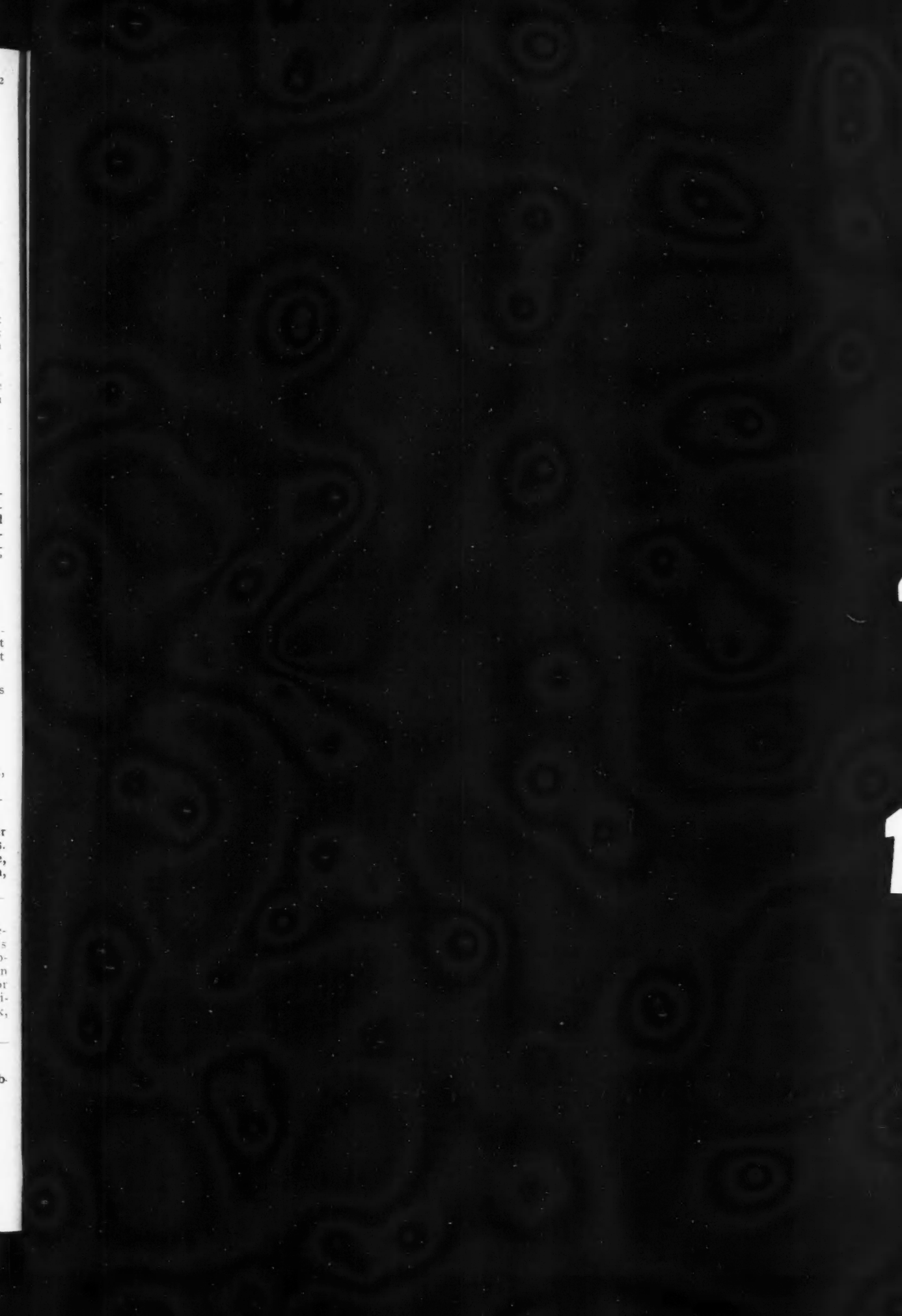

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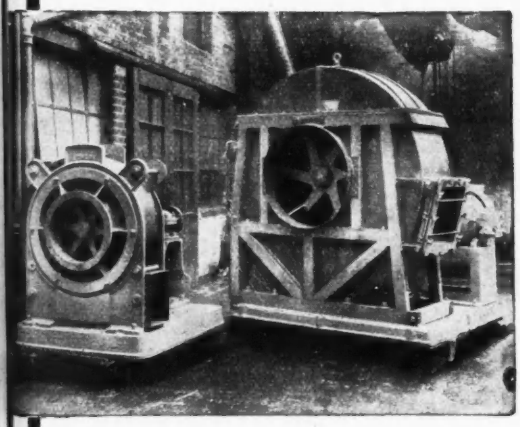

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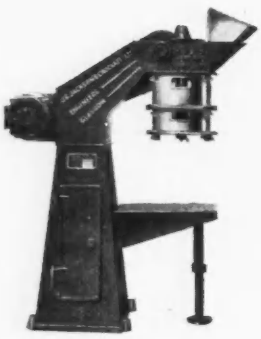

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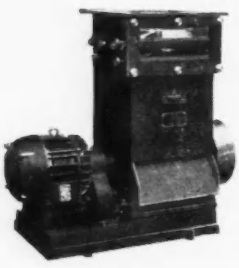

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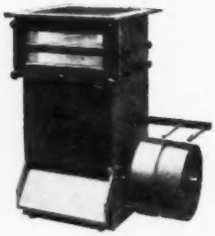

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